



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
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ATLANTA, GEORGIA 30303-8960

February 26, 2014

Mr. Brian D. Wittick, Chief
U.S. Nuclear Regulatory Commission
Projects Branch 2
Division of License Renewal
Office of Nuclear Reactor Regulation
Washington, D.C. 20555-0001

SUBJ: EPA Review and Comments
Draft Generic Environmental Impact Statement
For License Renewal of Nuclear Plants,
Supplement 50 regarding
Grand Gulf Nuclear Station, Unit 1 (GGNS)
Docket ID NRC-2011-0262
CEQ No. 20130368

Dear Mr. Wittick:

Pursuant to Section 309 of the Clean Air Act (CAA) and Section 102(2)(C) of the National Environmental Policy Act (NEPA), the U.S. Environmental Protection Agency (EPA) Region 4 reviewed the Draft Generic Environmental Impact Statement for License Renewal of Nuclear Plants, Supplement 50, (DGSEIS), regarding the Grand Gulf Nuclear Station, Unit 1, (GGNS) NUREG-1437, November 2013. We appreciate your coordination with us. The purpose of this letter is to transmit the results of the EPA's review.

This DGSEIS is the result of Entergy Operations, Inc. (Entergy) submitting a request to the U.S. Nuclear Regulatory Commission (NRC) to renew the operating license for an additional 20 years for the GGNS in Claiborne County, Mississippi. Grand Gulf completed an extended power uprate (EPU) on June 16, 2012, making it the largest single-unit nuclear power plant in the U.S. and fifth largest in the world. An Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) were published in 2012, related to the license amendment request for an EPU.

The GGNS Unit 1 is a single-cycle, forced-circulation, General Electric Mark III boiling water reactor (BWR). The proposed action is issuing a renewed power reactor operating license. The existing license for the GGNS will expire on November 1, 2024. The NRC's Federal action is the decision whether or not to renew the license for an additional 20 years. The NRC staff concluded that the environmental impacts of the renewal of the operating license would be smaller than those of feasible and commercially viable alternatives for energy production, and that the continued operation of GGNS is the environmentally preferred alternative.

For the renewal of a license, Title 10 of the Code of Federal Regulations (10 CFR 51.95(c)) states that the NRC shall prepare a Supplemental EIS which is a supplement to previously conducted Environmental Impact Statements. The current DGSEIS serves to meet this requirement, and includes an analysis that evaluates the environmental impacts of the proposed action of relicensing GGNS Unit 1.

Based on our review, EPA Region 4 is rating the DGSEIS an EC-2, that is, additional information is requested in the Final GSEIS (FGSEIS) regarding some environmental concerns. We request that the following issues be further addressed in the FGSEIS: spent nuclear fuel storage, transportation and disposition, radionuclides in groundwater, and climate change adaptation measures. Waste storage, transportation and disposition are issues to be clarified with a decision from the Commission regarding the proposed update to the Waste Confidence Rule. The FGSEIS should also include updated information regarding the status of this decision making process. Also, the FGSEIS should provide information regarding the progress of defining the extent of radionuclides in groundwater on the northeast side of the Unit 2 power block and its causes. The FGSEIS should also include updated information regarding the consultation process with resource agencies regarding endangered and threatened species, and an update of coordination activities with State Historic Preservation Offices (SHPOs) and tribes regarding cultural and historic resource preservation. Our detailed comments are enclosed.

In conclusion, the DGSEIS provides useful information for assessment of the proposal to relicense GGNS Unit 1. Thank you for the opportunity to comment on this project. We look forward to reviewing the FGSEIS. If you have any questions, please contact Ramona McConney of my staff at 404-562- 9615.

Sincerely,



Heinz J. Mueller, Chief
NEPA Program Office
Office of Environmental Accountability

Enclosures: EPA Review and Comments
Summary of Rating Definitions and Follow Up Action

Cc: David Drucker, NRC, Senior Project Manager

EPA Review and Comments
Draft Generic Environmental Impact Statement
For License Renewal of Nuclear Plants,
Supplement 50 regarding
Grand Gulf Nuclear Station, Unit 1

General

The DGSEIS, Section 3.0, states that Entergy did not identify the need to undertake any major refurbishment or replacement actions associated with license renewal. Therefore, refurbishment was not assessed in the DGSEIS. Entergy currently has no planned changes or ground-disturbing activities associated with the license renewal at GGNS.

The EA (published in 2012) stated that the licensee planned to make physical modifications to systems necessary to generate and/or accommodate the increased feedwater and steam flow rates to achieve EPU power levels, and that land disturbance involving installation of a new radial well system would be necessary. The FGSEIS should clarify recent physical modifications.

Recommendations: The FGSEIS should clarify the physical condition and status of the facility, relative to structural integrity and relicensing. Maintenance plans pertaining to facility aging should also be addressed. Additional information pertaining to structural integrity and facility aging (data, analyses, and/or discussions) should be included (or referenced as appropriate) in the FGSEIS.

Waste Confidence

Storage, transportation and disposition of spent nuclear fuel is of particular concern for all nuclear power plants. The EPA recently commented on the NRC's Waste Confidence Draft Generic Environmental Impact Statement regarding the pending update to the Waste Confidence Rule. The EPA's comment letter was submitted to the NRC on January 15, 2014. The EPA appreciates the opportunity to comment on this important issue.

As directed by the Commission, the NRC will not issue a renewed license before the resolution of waste confidence-related issues. *"The revised rule and supporting EIS are expected to provide the necessary NEPA analyses of the waste confidence-related human health and environmental issues,"* (page 6-3).

The DGSEIS also states that if the results of the Waste Confidence Rule and supporting EIS identify information requiring a supplement to the SEIS that an appropriate additional NEPA review will be performed for those issues prior to the NRC making a final licensing decision.

Recommendation: The FGSEIS should include updated information regarding the decision making process for the revised Waste Confidence Rule in relationship to GGNS. The FGSEIS should address how radioactive waste handling, storage, and disposition will be conducted at GGNS in light of the updated rule, and the changes to current procedures that will be made as a

result of the updated rule. The FGSEIS should clarify the potential changes in direct, indirect and cumulative impacts that may occur as a result of the updated rule.

Radionuclides Released to Groundwater

Section 4.5.3 discusses radionuclides in groundwater, and, in particular, tritium contamination on the northeast side of the Unit 2 power block. The GGNS is actively involved in defining the extent of contamination and its causes.

The DGSEIS concludes that the GGNS radioactive effluent control program showed that radiation doses for the years 2008-2012 comply with federal radiation protection standards, and that similar performance is expected during the license renewal term. The document concludes that the impacts from radioactive effluents would be small (Section 4.9.2.4).

Recommendation: A sentence should be added to the paragraph in line 12 on page 4-5 indicating that monitoring wells will be added as needed to better characterize the tritium plume if the levels in any current well show an increasing trend in a given direction. In addition, the FGSEIS should provide updated information regarding the progress with defining the extent of the contamination and its causes. Updated sampling data should be included or referenced in the FGSEIS.

Socioeconomics

We understand that the NRC cannot include mitigation measures in the license that do not pertain to nuclear security. However, the EPA encourages the applicant to continue coordinating with the communities that will be impacted by the proposed license renewal, and to continue a comprehensive public outreach strategy to inform residents of the risks and impacts as a result of the proposed license renewal.

Recommendations: The EPA encourages the applicant to continue a comprehensive public outreach strategy to inform local residents of the risks and impacts as a result of the proposed license renewal. This should include, but is not limited to, targeted outreach campaigns to neighbors, informational literature, and updated websites. Traffic impacts and emergency preparedness measures are particular topics that should be addressed.

Environmental Justice (EJ)

The DGSEIS includes demographic and impact data related to minority and low-income populations. The NRC assessed the potential for disproportionately high and adverse health and environmental impacts, and concluded that there are no environmental pathways by which the identified EJ populations in the 50-mile region would be likely to suffer disproportionately high and adverse environmental or health impacts as a result of the proposed license renewal (Section 4.10.7).

The EPA appreciates that subsistence pathways in the region as a result of the consumption of water, local food, fish, and wildlife were evaluated in this DGSEIS. Communities with EJ concerns may experience benefits and burdens associated with this project, and should be

involved in meaningful discussions with the project team throughout the decision-making process. We encourage the project team to continue coordinating with the communities that will be impacted by the license renewal. Meaningful involvement and discussion of project issues should take place throughout project planning.

Recommendations: Local residents should be involved in meaningful discussions with the project team throughout the decision-making process. Efforts to meaningfully involve and outreach to residents near the site and with increased visibility to the facility's structures and its emissions should be made. On page 8-11, line 16, the reference to EJ text should be changed from 4.9.7 to 4.10.7.

Endangered and Threatened Species

The DGSEIS summarizes the NRC's coordination with the U.S. Fish and Wildlife Service (FWS) and state wildlife agencies in Mississippi and Louisiana. The FWS stated that no Federally listed species or their habitats are likely to be affected from the proposed GGNS license renewal (page 4-9).

Recommendations: The EPA defers to the FWS and the State wildlife agencies on these issues and agrees that the FGSEIS should provide updated information regarding the consultation process with the FWS and State agencies.

Indirect and Cumulative Impacts

The NRC staff's preliminary determination is that potential cumulative impacts for the proposed project would vary, depending on the resource (Section 4.12.8). The DGSEIS evaluates potential cumulative impacts on resources including air, water, aquatic ecology, terrestrial ecology, human health, socioeconomics and cultural resources (Table 4-10).

Recommendations: We appreciate the information in the DGSEIS regarding your coordination with resource agencies regarding mitigation planning for ecological, cultural and historical resource impacts, and we recommend that continuing coordination take place as the project proceeds in order to minimize direct, indirect and cumulative impacts.

Historic Preservation

The DGSEIS (Section 2.2.10) includes a thorough discussion of cultural and historic resources, and describes the project team's coordination with the Mississippi and Louisiana State Historic Preservation Offices (SHPOs) and tribes. The document concludes that the potential impact of license renewal on cultural and historic resources is minimal. However, Entergy has been advised that the appropriate SHPO, and the NRC, as applicable, should be consulted before ground-disturbing activities take place.

Recommendations: The FGSEIS should include an update of coordination activities with the SHPOs and tribes, along with the finalized decision documents, if available. The EPA defers to the SHPOs and tribes on these issues.

Greenhouse Gases (GHGs)

Section 6.2 of the DGSEIS evaluates the carbon dioxide (CO₂) emissions of the nuclear power station from the life cycle contributions emitted from the uranium fuel cycle and operation of nuclear power facilities. The DGSEIS concludes that GHG emissions associated with the proposed relicensing action are likely to be lower than those associated with fossil fuel based energy sources (page 6-9).

Recommendations: Efforts should be made to minimize GHG emissions to the extent feasible during the license renewal period. Clean energy options, such as energy efficiency and renewable energy, should be a consideration in the purchase of maintenance equipment and vehicles. In addition, the EPA recommends that the project team thoroughly consider the need for measures to manage potential climate-related impacts, such as potential increases in storm frequency and intensity resulting in increased floodwater flows. The FGSEIS should address measures for climate change adaptation for the GGNS site, taking into consideration site-specific conditions. Please refer to EPA's website (www.epa.gov/climatechange) for useful information about climate change.

SUMMARY OF RATING DEFINITIONS AND FOLLOW UP ACTION*

Environmental Impact of the Action

LO-Lack of Objections

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC-Environmental Concerns

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impacts. EPA would like to work with the lead agency to reduce these impacts.

EO-Environmental Objections

The EPA review has identified significant environmental impacts that must be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU-Environmentally Unsatisfactory

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS state, this proposal will be recommended for referral to the CEQ.

Adequacy of the Impact Statement

Category 1-Adequate

The EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collecting is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2-Insufficient Information

The draft EIS does not contain sufficient information for the EPA to fully assess the environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

Category 3-Inadequate

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

*From EPA Manual 1640 Policy and Procedures for the Review of the Federal Actions Impacting the Environment